

R E M A R K S

35 U.S.C. 103 - CLAIM REJECTIONS

Claims 1-6 and 14 stand rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 6,298,671 (Kennelley et al.) in view of U.S. Patent 5,129,759 (Bishop). In light of the current amendments and following comments, applicant believes claims 1-6 and 14 now stand in formal condition for allowance.

As amended, claim 1 requires the step of “connecting a natural gas pipeline to the interior of one or more low pressure underground salt formation storage facilities” and “maintaining the pressure of the natural gas in the pipeline either below the pressure of the natural gas stored in at least one of the one or more low pressure underground salt formation storage facilities or above the pressure of the natural gas stored in at least one of the one or more low pressure underground salt formation storage facilities, thereby causing natural gas to be drawn from at least one of the one or more low pressure underground salt formation storage facilities into the pipeline, or to be injected from the pipeline into at least one of the one or more low pressure underground salt formation storage facilities, respectively” One novel aspect of the present application relates to a pipeline which is connected a shallow depth underground salt formation storage facility for introducing gas into and removing gas from the storage facility. The ability to both receive gas from a supply line and deliver gas to the same supply line is in part due to the pressures of the supply line and the storage facility being just above those of the storage facility or just below those of the storage facility. The pressure of the pipeline gas may quickly be increased or decreased above or below the operating pressure of the storage facility moving the natural gas. In this way flow of natural gas to and from the pipeline is quickly and easily reversible. Unlike the prior art natural gas can quickly and easily be added to or removed from the gas supply pipe as required to facilitate the short term trading. Neither Kennelley et al. nor Bishop, alone or in combination, teach, disclose, or even suggest a single pipeline for both introducing gas into a shallow depth underground salt formation storage facilities and removing gas from a shallow depth underground salt formation storage facilities.

In sharp contrast, Kennelly et al. discloses liquefying natural gas and transporting it by a tanker to a first platform. At the first platform the liquefied natural gas is re-gasified and injected

into the storage facility. Kennelly et al then discloses removing the natural gas through a second platform. Bishop is primarily concerned with storing crude oil in underwater salt caverns. Bishop does not disclose, teach or even suggest, a single pipeline for both adding and removing any substance from a storage facility.

Further, there is no teaching or suggestion to maintain such a pipeline at a pressure higher than or lower than the operating pressure of the storage facility to effect the injection or withdrawal of natural gas. As opposed to a single pipeline for both injecting and withdrawing gas, Kennelly et al. discloses an injection platform for introducing gas into a storage facility. An injection platform of this type would inject gas into a storage facility with operating pressures significantly higher than the storage facility's pressure.

As amended, Claim 14 requires "a natural gas pipeline connected with the at least one storage facility having natural gas therein with pressure in the pipeline maintained either lower than or higher than the pressure of the natural gas stored in the underground salt formation storage facility, thereby causing natural gas to be drawn from the storage facility, or injected into the storage facility, respectively." One novel aspect of the present application relates to the pipeline which is connected a shallow depth underground salt formation storage facility for introducing gas into and removing gas from the storage facility. Unlike the prior art, natural gas can quickly and easily be added to or removed from the gas supply pipe as required to facilitate the short term trading. The present application's novel ability to both receive gas from a supply line and deliver gas to a supply line is due, in part, to the pressures of the supply line and the storage facility being close, but slightly different. By increasing or decreasing the pressure in the pipeline above or below that of the storage facility gas is directed into or out of the storage facility, respectively. The flow of natural gas to and from the pipe is quickly and easily reversible. Neither Kennelly et al. nor Bishop alone or in combination teach, disclose, or even suggest a single pipeline for both introducing gas into a shallow depth underground salt formation storage facilities and removing gas from a shallow depth underground salt formation storage facilities.

In sharp contrast, Kennelly et al. discloses liquefying natural gas and transporting it by a tanker to a first platform. At the first platform the liquefied natural gas is re-gasified and injected into the storage facility. Kennelly et al then discloses removing the natural gas through a second

platform. Bishop is primarily concerned with storing crude oil in underwater salt caverns. Bishop does not disclose, teach or even suggest, a single pipeline for both adding and removing any substance from a storage facility.

Additionally, Claim 14 requires a computer system for controlling the gas flow between the storage facility and the pipeline by controlling the pressure of the natural gas in the pipeline. As previously stated Kennelly et al. does not disclose a pipeline for introducing gas into and removing gas from an underground storage facility. Further, there is no teaching of a computer system for controlling the flow to and from the underground storage facility by controlling the pressure of the natural gas in the pipeline.

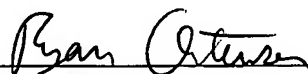
New Claim 42 provides further details not found in the prior art and is believed to be patentable for at least the reasons discussed with respect to Claims 1 and 14.

CONCLUSION

In light of the above amendments and remarks, Applicant respectfully submits that the application now stands in prima facie condition for allowance and courteously requests that this application be advanced to issue. Applicant is of the opinion that no additional fees are required with the submission of this response. However, if additional fees are required, the Commissioner is hereby respectfully authorized to deduct such fees from Deposit Account Number 13-2166. The Examiner is respectfully invited to call Applicant's representative, Ryan Christensen, at 713-355-4200, to discuss any matters, that may arise, where such discussion may resolve such matters and place this application in condition for allowance.

Respectfully submitted,

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Date



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